

**BOARD OF SUPERVISORS  
FINANCE/GOVERNMENT OPERATIONS AND  
ECONOMIC DEVELOPMENT COMMITTEE  
INFORMATION ITEM**

**SUBJECT:** Value of Volunteer Providers to the Loudoun County Combined Fire and Rescue System

**ELECTION DISTRICT(S):** Countywide

**CRITICAL ACTION DATE:** At the pleasure of the Board

**STAFF CONTACT(S):** Emily Vasile, Management and Budget  
Megan Bourke, Management and Budget  
Erin McLellan, Management and Budget

**PURPOSE:** To provide the Finance/Government Operations and Economic Development Committee (FGOEDC) an analysis of the value of volunteer companies to the Loudoun County Combined Fire and Rescue System (LC-CFRS).

---

**BACKGROUND:** On June 13, 2017, staff presented an item<sup>1</sup> to the Finance/Government Operations and Economic Development Committee (FGOEDC) detailing the benefits offered to volunteer fire and rescue company members. During discussion, Supervisor Letourneau requested that staff return to the FGOEDC with an analysis of the value of volunteer companies to the Combined System.

Over the past year, the Department of Management and Budget (DMB) led this analysis with assistance from Loudoun County Fire and Rescue (LCFR), the Loudoun County Combined Fire and Rescue System's (LC-CFRS) Administrative Operations Committee (AOC), and individual volunteer companies. DMB staff liaised with each volunteer company to obtain feedback on the analysis, to add context to staff's assumptions, and to provide transparency to the analysis. A preliminary draft of this staff report was shared with the AOC and discussed at its October 11, 2018, meeting. AOC comments on the analysis and staff report are included as Attachment 1.

A concept included within the AOC comments regarding this analysis is the difference between a "value" analysis and a "replacement" analysis. The AOC comments indicate, accurately, that both approaches were considered during the preparation of this Item. A decision was made to focus this Item on the "value" approach since this approach better captures the contributions of

---

<sup>1</sup> [June 13, 2017 FGOEDC Item 16, Volunteer Fire and Rescue Member Benefits Update](#)

volunteer companies and volunteer providers to the County. The main difference is that the “value” approach estimates the cost of a comparable career employee within the system seat currently occupied by a volunteer provider. This analysis assumes the same shift schedule, the same shift coverage, and the same basic workweek for career and volunteer providers as these exist today. Handling the analysis this way provides the best actual to actual comparison staff was able to define.

A “replacement” analysis would consider the direct costs to the County if volunteer providers were not available and the County had to convert to a fully career provider system. If this were the situation, the County would not operate the same shift schedule and workweek currently used because it is inherently inefficient for a fully career system. Currently, the County utilizes a base 12-hour shift with an average 42 hour workweek with four (4) platoons.

Stated differently, this means that all providers, both career and volunteer, working within a volunteer operated station, are using a 12-hour shift as the basic shift, meaning the provider works either from 6:00 a.m. to 6:00 p.m., or 6:00 p.m. to 6:00 a.m. Two people are typically needed to fill each seat on a fire engine or medical transport unit. In a standard configuration, this means that the career provider works the 6:00 a.m. to 6:00 p.m. shift and the volunteer provider works the 6:00 p.m. to 6:00 a.m. shift. Career providers working 12-hour shifts, work an average of 42 hours over a two-week schedule (48 hours one week and 36 hours the other week). There are four different shifts, meaning that four different career staff will occupy the same seat on the fire engine or medical transport unit during the work week.

Using this combination of 12-hour shift/42-hour average work week/four platoons, staff calculated the value of volunteer providers filling those seats they fill on every engine, ladder truck, medical transport unit, tanker, and other apparatus necessary to meet minimum staffing. Staff used the hourly cost of comparable career staff for these shifts. Staff’s opinion is that this “value” methodology best captures the value of the volunteer provider contribution to the County.

If, however, a “replacement” methodology is used, staff would need to consider how the County would change the operational paradigm when only career providers are considered. If the County had a fully career system, the County would use a 24-hour shift with an average 48 to 53 hour workweek with three (3) platoons. From a high level, the cost in dollars to the County to “replace” volunteer providers is significantly less than the value that volunteer providers bring by giving their time and effort to the community. Due to the high levels of volunteer participation in the Combined System, the basic system schedule is different to accommodate the realistic schedules of volunteer providers. However, if volunteer providers were not available, the System would be structured differently, making a “replacement” cost significantly lower than the number represented in this analysis that shows the value of the volunteer providers to the System.

Because a Combination System and an all career system would be structured so differently, it was determined that a “value” analysis was the most appropriate method to demonstrate the contribution to the County of volunteer providers.

The following analysis is bounded by these conditions.

1. Analysis question: What value do volunteer companies bring to the Loudoun County-Combined Fire and Rescue System?
2. Minimum staffing requirements ensure that the appropriate number and type (rank) of personnel are available to execute incident response according to mandates, regulations, and LCFR adopted standards. These requirements identify the total number of personnel that must be available during a given shift to respond to calls for service.
3. There is an inherent and unquantifiable benefit of diverse, highly trained, highly motivated volunteers providing emergency medical and fire suppression services to the communities in which they live.

### *History of the Combined System*

Loudoun County's first volunteer company was formed in 1803 in Leesburg. Over the next 200 years, volunteer companies formed to provide fire suppression and emergency medical services (EMS) in communities. Outside of responding to calls for service, company activities focused on training and fundraising, often through community events.

As the Government Reform Commission found in 2012, "the volunteer system is a part of the public safety and social fabric of Loudoun County, not just a source of financial savings to County taxpayers."

*The following information has been edited from a Government Reform Commission memorandum from November 2012.<sup>2</sup>*

Prior to the 1980s, the County was served exclusively by volunteer companies that staffed their own stations, serving a largely rural, small population. In approximately 1983, the Arcola Company petitioned the County for temporary assistance in providing paid support to the volunteer company. This temporary support was provided for three years, and then the support in Arcola was made permanent. In 1988-89, additional paid staff of approximately 12 individuals were hired to provide the support requested by some of the volunteer companies. During this time the relationship between career and volunteer staff and the role of the career personnel in the station were governed by service agreements that stipulated the responsibilities of the County department and the companies, the hours of service to be provided by the career staff, and the different responsibilities of the career staff. For example, career staff were not expected to be involved in fundraising, social events, and similar non-operational matters.

Beginning in the mid-1990s, the level of career support began to increase exponentially due to Loudoun's rapid population growth, and the development of larger commercial office, industrial, and retail facilities led to new and complex requirements for staffing and equipment for both fire and rescue needs. Such growth impacted volunteer companies. The first four volunteer

---

<sup>2</sup> [Loudoun County Government Reform Commission Memorandum, "Recommendations on Fire & Rescue Services," November 25, 2012](#)

companies requested career assistance during this time, leading to a doubling of career station personnel by the end of the 1990s. To address the changing needs, in 2002 the Board of Supervisors reconfigured the fire and rescue services of the County into a combined system of both volunteer and career emergency medical providers.

*(End excerpted memorandum.)*

In 2014, the Board further augmented the Loudoun County-Combined Fire and Rescue System, (LC-CFRS, “System”), which brought the (formerly named) Department of Fire, Rescue, and Emergency Management (DFREM) and all volunteer companies under the authority of one System Chief. Other reforms to the System approved during that time included: creation of two assistant chief positions, one to support operations and another responsible for support services and volunteer administration; and the creation of advisory committees composed of officers from each System company, including appointees from LCFR. In taking these actions, the Board sought to centralize command and control and unify standard operating procedures between career and volunteer personnel.

Currently, there are 15 volunteer companies, 10 of which provide volunteers for minimum staffing on at least three different shift schedules, including evenings (6:00 p.m. to 6:00 a.m.), Saturday and Sunday days (6:00 a.m. to 6:00 p.m.), and/or weekdays (6:00 a.m. to 6:00 p.m.).

#### *Components of the Quantitative Value Analysis*

To evaluate the value of volunteer providers to the County, staff analyzed the following components: personnel required for minimum staffing; System operations; and ancillary activities of volunteer companies. Finally, staff analyzed the resources that the County provides to volunteer companies in order to generate this value.

### **1. Personnel Required for Minimum Staffing**

LC-CFRS’ minimum staffing requirements are displayed at a summary level in Table 1 below and detailed more completely in Attachment 2. For the purposes of this analysis, LCFR assumes a standard crew of three career personnel per engine, four career personnel per ladder truck, four career personnel per heavy rescue squad, one career personnel per tanker, and two career personnel per medical transport unit.

Minimum staffing requirements, discussed throughout this report, ensure that the appropriate number and type (rank) of personnel are available to execute incident response according to mandates, regulations, and LC-CFRS adopted standards. Further information detailing minimum staffing positions currently provided by career and volunteer companies is included in Attachment 2. Minimum staffing is organized by battalion, where battalions are geographic sub-parts of the County, supervised by a senior command officer. Each battalion chief supervises an

average of seven stations and commands significant incidents when multiple stations respond simultaneously.<sup>3</sup>

Minimum staffing is provided by career and volunteer positions over a 12- and 24-hour period. Minimum staffing positions are currently filled exclusively with volunteers by two volunteer companies (Sterling Rescue and Purcellville EMS); 10 volunteer companies share minimum staffing responsibilities with LCFR career personnel. The remaining shifts are staffed exclusively by LCFR career personnel. LC-CFRS' minimum staffing depends upon 84 volunteer shifts per week, as summarized at a high level in Table 1. With approximately 800 operational volunteers currently in the system, the staffing factor for staffing these 84 shifts is significantly greater than the staffing factor needed on the career side.

Staffing factor is understood as the number of employees needed to provide full coverage of an employee station or post.<sup>4</sup> On the career side, LCFR uniformed employees are scheduled to work 2,184 hours per year (42 hours per week for 52 weeks per year). Factoring in all forms of leave usage and mandatory training, an employee actually works, on average, between 1,750 and 1,780 hours per year. The resulting delta (400 to 430 hours) must be filled by other qualified personnel. When multiplied across each minimum staffed position, the total number of hours requiring coverage equates to a gap that must be filled via overtime or through the hiring of additional FTE. The concept of having additional FTE available to fill the void is often referred to as a "staffing factor."<sup>5</sup>

**Table 1. LC-CFRS Minimum Staffing Shifts**

	<b>Career</b>	<b>Volunteer</b>	<b>Total</b>
Weekdays for 12 Hours	135	6	141
Weekend Days for 12 Hours	120	23	143
All Nights for 12 Hours	83	55	138
<b>Total</b>	<b>338</b>	<b>84</b>	<b>422</b>

Minimum staffing of 422 shifts per week as detailed in the table above is considered LC-CFRS' *current service level*. Volunteers support minimum staffing for 84, 12-hour shifts. Volunteer position types are not fully comparable to career positions, so the following assumptions were made in establishing a value of those 84 volunteer, 12-hour shifts.

- EMS-only providers were valued as cross-trained dual role firefighters.
- Every medical transport unit staffed by volunteers were valued as paramedic-level units, even though these units in practice are not always staffed as such.
- Company officers were valued as captains.
- Chief officers were valued as battalion chiefs.

<sup>3</sup> [October 11, 2016 FGOEDC Item 15, FY 2018 Budget Development - Fire and Rescue Staffing and Overtime Analysis](#)

<sup>4</sup> Ammons, 2009, Chapter 25, para. 3.

<sup>5</sup> [October 11, 2016 FGOEDC Item 15, FY 2018 Budget Development - Fire and Rescue Staffing and Overtime Analysis](#)

To determine the value of volunteers providing minimum staffing for the System, staff first calculated how many career staff positions would be needed to cover volunteer shifts on a weekly basis using a 42-hour work week and 12-hour shifts. Once that was determined, staff used a one-to-one replacement of volunteer-staffed shifts with career equivalent using a multiplier and rounding to next highest FTE. Staff has valued those 84 shifts as equivalent to 135 career personnel, which is the total number of career personnel that would be needed to supply minimum staffing coverage System-wide.

To value these positions, staff used the FY 2019 average annual salary for each of the career position types and fringe benefit rates (detailed in Table 2) and multiplied that figure by the number of each position. Staff typically budgets \$12,500 for overtime per uniformed career position, which has also been included in the table below.

**Table 2. Value of Volunteer-Provided Minimum Staffing<sup>6</sup>**

	Monday – Friday (6 a.m. – 6 p.m.)	Weekend Days (6 a.m. – 6 p.m.)	All Nights (6 p.m. – 6 a.m.)	Quantity of FTE <sup>7</sup>
<i>Volunteer Shifts to Convert to FTE</i>	<i>6</i>	<i>23</i>	<i>55</i>	<i>84</i>
Firefighter	5	6	42	53
Firefighter – Medic	5	3	18	26
Technician	0	3	26	29
Captain	0	3	22	25
Battalion Chief	0	0	2	2
<b>Total Career FTE</b>	<b>10</b>	<b>15</b>	<b>110</b>	<b>135</b>

  

	Quantity of FTE	Salaries	Fringe Benefits	Overtime	Total Value
Firefighter	53	\$2,631,503	\$1,541,929	\$662,500	\$4,835,932
Firefighter – Medic	26	\$1,800,750	\$855,191	\$325,000	\$2,980,941
Technician	29	\$1,815,731	\$916,518	\$362,500	\$3,094,749
Captain	25	\$2,433,567	\$958,306	\$312,500	\$3,704,373
Battalion Chief	2	\$224,042	\$82,351	\$25,000	\$331,393
<b>Total</b>	<b>135</b>	<b>\$8,905,592</b>	<b>\$4,354,296</b>	<b>\$1,687,500</b>	<b>\$14,947,388</b>

Some volunteer companies staff beyond the required minimum, or “overstaff.” Some volunteer companies with great regularity staff apparatus units beyond the minimum staffing required: Arcola staffs a second engine two to three nights per week; Leesburg Fire staffs a second engine at Station #1 three to four nights per week; and on weekends, Sterling Rescue puts more than the minimum number of ambulances in service. While representative of overstaffing, these examples are not an exhaustive list. Overstaffing data cannot be isolated in Computer-Aided Dispatch (CAD) records.

<sup>6</sup> Attachment 3 includes the details of the mathematical exercise to arrive at a value of 135 FTE.

<sup>7</sup> FTE is equivalent to the total number of additional uniformed staff working 12 hour-shifts on a 42-hour work week. Or, volunteer shifts multiplied by hours per shift multiplied by days per week divided by 42 hours.

Finally, though some volunteer companies regularly overstaff apparatus or provide additional apparatus for service on a somewhat regular basis, for the sake of the analysis staff believes that determining the value of personnel support provided by volunteers should be based on the minimum staffing requirements of the System. The number of shifts and types (rank) of personnel required to fill minimum staffing shifts are what the System has determined to be the necessary staffing level to respond to emergency incidents. If the System deemed additional apparatus and additional response personnel essential to provide appropriate safety response, the required minimum staffing standards would be different.

This portion of staff's analysis has received the most feedback from volunteer companies, which have expressed their desire to see their overstaffing practices valued similarly to minimum staffing practices. Because overstaffing data are not easily available, staff does not feel comfortable basing the analysis on anything but the data included in Table 2. Staff does note that, according to the most recently available self-reported LOSAP data (FY 2017), active system volunteer members (operational only) donated 433,254 hours in assigned duty. By using the same distribution of position ranks as minimum staffing (summarized in Table 3 in Attachment 2), staff attempted to value those 433,254 hours. This methodology, which depends on substantial assumptions of the makeup of rank of people supplying those assigned duty hours, showed that a total of 198 career positions would provide a similar level of hours of service at an annual cost of approximately \$22 million.<sup>8</sup> However, given the lack of specific position data regarding staffing beyond the minimum required, staff is not confident in this alternative approach. Additionally, because the \$22 million figure is so substantially greater than the value arrived at from the minimum staffing analysis in Table 2, staff does not believe that this methodology is as defensible as the method demonstrated in Table 2.

Further value provided by volunteers beyond minimum staffing is discussed in the Qualitative Analysis section of this report.

## **2. Operations**

**Stations.** Presently there are 20 stations located throughout the County that provide fire and rescue services. The County owns eight of these stations, and volunteer companies own the remaining 12. In the past 13 years, three volunteer stations<sup>9</sup> were renovated or replaced with County funds. There are six currently volunteer-owned stations previously authorized to be replaced with County funds in prior Capital Improvement Programs and in the current six-year

---

<sup>8</sup> "Active" means the individual contributed and reported sufficient time through service to qualify for a LOSAP plan year of retirement eligibility. The number of Active Volunteers (Administrative and Operational) in FY 2017 was 781. The breakdown between operational and administrative is approximately 80/20, thus operational members were approximately 693.

<sup>9</sup> Purcellville #2/#14 in 2006, Middleburg #3 in 2011, and Arcola #9 in 2012. Please note that the Arcola Annex is the former fire and rescue station for Arcola Volunteer Fire Department, replaced in 2012 by the County-owned facility known as the Brambleton Public Safety Center, shared with LCFR's Fire Marshal's Office. The company outgrew the 10,000 square foot facility, which is currently used to house several pieces of apparatus including a rehab unit, plow, reserve unit, EMS unit, fuel pumps and public education materials.

and future fiscal years of the FY 2019 – FY 2024 Capital Improvement Plan (CIP).<sup>10</sup> Finally, there are six volunteer-owned stations that are not currently planned to be replaced with County facilities.

Career staff are permitted to provide service out of the volunteer-owned stations through service agreements between the County and each independent volunteer company. The County does not pay a user fee or rent of any kind; rather, operations of the stations are paid for by the volunteer companies, the costs of which are likely partially funded through the County's annual \$6.379 million contribution to volunteer companies (discussed later in this analysis).

To quantify the value of career staff providing services out of volunteer-owned stations, staff attempted to determine the value the market would place on the use of such space. As such, staff analyzed the value of leasing similarly sized-commercial square footage with maintenance services and utilities included in the lease payment. The Department of General Services (DGS) estimates that generally the County pays between \$12 to \$15 per square foot for warehouse space and \$24 to \$26 square feet for office space with an additional \$3 per square foot for maintenance and \$3 per square foot for utilities. Staff believes a-per-square foot value, inclusive of maintenance and utilities, of \$26 is reasonable. According to the County's Assessment and Land Parcel Database<sup>11</sup>, the total square footage of all 12 volunteer-owned stations is 161,078 square feet. Staff has calculated the value of the use of volunteer-owned stations to be \$4.2 million per year, as summarized in Table 3.

---

<sup>10</sup> Round Hill #4, Aldie #7, Philomont #8, Lucketts #10, Lovettsville #12, and Sterling Fire and Rescue Station #11/15.

<sup>11</sup> The County's Assessment and Land Parcel Database can be accessed via the following hyperlink: <http://reparcelasmt.loudoun.gov/pt/search/commonsearch.aspx?mode=address>.



**Table 3. Value of Use of Volunteer Stations**

Station	PIN	Square Footage <sup>12</sup>	Lease Value
Leesburg #1 <sup>13</sup>	231370170000	16,054	\$417,404
Round Hill #4	584102990000	4,637	120,562
Hamilton #5/#17	382277245	17,592	457,392
Ashburn #6	085267546000	34,085	886,210
Aldie #7	361455459000	4,144	107,744
Philomont #8	530267406000	5,128	133,328
Lucketts #10	179408655000	5,640	146,640
Sterling #11/#15	022269724	8,772	228,072
Lovettsville #12	371492474000	17,352	451,152
Loudoun Rescue (Leesburg) #13	232401493000	12,746	331,396
Cascades #18/#25	011463209	24,884	646,984
Leesburg #20 <sup>14</sup>	188266523	10,044	261,144
<b>Total</b>		<b>161,078</b>	<b>\$4,188,028</b>

Staff developed an alternative approach to valuing the use of volunteer-owned stations to confirm the order of magnitude of the value shown in Table 3. Staff identified the assessed value of each volunteer-owned fire station and used the concept of a capitalization rate to arrive at a market value for each building. Capitalization rates are typically used to determine the return an investor could assume from the purchase of property but are generally not used to determine the value of public facilities; nonetheless, staff utilized this method to show an alternative approach for consideration.

Table 4 summarizes this approach. The assessed value for each facility shown was generated through the County's Assessment and Land Parcel Database. To fairly account for market value, staff inflated the assessed value of each volunteer facility by 30 percent, which is meant to represent the average difference between assessed value and appraised value.

The Office of the Commissioner of the Revenue utilizes the following capitalization rates to value similar commercial properties:

- Class A Flex Warehouse: 7.75%
- Class B Flex Warehouse: 7.25%
- Class A Office: 7.00%
- Class B Office: 7.10%

<sup>12</sup> Source: Assessment and Land Parcel Database.

<sup>13</sup> Leesburg Station #1 is not included in LCFR's current or proposed Service Plan for LC-CRFS. However, the volunteer company does utilize the facility for the storage of apparatus and does occasionally staff those apparatus with volunteers.

<sup>14</sup> The parcel on which Leesburg #20 is located also includes the Town of Leesburg Police Station. The assessed value of the entire parcel is \$14,953,150. To approximate the value of only the fire station, staff identified the gross square footage that is associated with the fire station and proportionally calculated the assessed value. Staff used the County's Assessment and Land Parcel Database to identify the gross square footage for both the fire and police stations.

Staff used the 7.75 percent capitalization rate to err on the side of valuing the volunteer companies. This value is calculated to be \$3.5 million per year. As Table 4 summarizes, using the capitalization rate methodology arrives at a similar, though lower, value to the per square foot analysis in Table 3. Because the value derived in Table 3 is higher, staff has used this value in the final analysis, summarized in Table 9.

**Table 4. Value of Use of Volunteer Stations Using Capitalization Rate**

Station	Assessed Value (2018) <sup>15</sup>	Estimated Appraised Value	Annual Value (7.75%) <sup>16</sup>
Leesburg #1	\$2,283,250	\$2,968,225	\$230,037
Round Hill #4	615,280	799,864	61,989
Hamilton #5	4,133,900	5,374,070	416,490
Ashburn #6	8,529,860	11,088,818	859,383
Aldie #7	522,900	679,770	52,682
Philomont #8	462,910	601,783	46,638
Lucketts #10	637,920	829,296	64,270
Sterling #11/#15	1,535,150	1,995,695	154,666
Lovettsville #12	1,480,310	1,924,403	149,141
Loudoun Rescue (Leesburg) #13	3,288,020	4,274,426	331,268
Cascades #18/#25	6,572,920	8,544,796	662,222
Leesburg #20	4,873,274	6,335,257	490,982
<b>Total</b>	<b>\$34,935,694</b>	<b>\$45,416,403</b>	<b>\$3,519,771</b>

**Apparatus.** Ownership of apparatus is similar to that of stations; some are owned by volunteer companies, and other pieces are County-owned. By policy, volunteer companies can apply on an annual basis for County funding to support the purchase of new or replacement apparatus. Up to 59 percent of the purchase can be County-funded with ownership of the apparatus remaining with the volunteer companies. Many, but not all, volunteer companies leverage these existing funds when replacing apparatus on an established schedule. The funding is established in an ongoing CIP project that totals \$3 million for FY 2019. Over the past six fiscal years, the County has allocated an average of \$1.6 million of the available \$3 million to volunteer companies, with the balance being used to purchase apparatus for System-wide use managed by LCFR.

Allowing career personnel to utilize volunteer-owned fire apparatus has a value just as the use of volunteer-owned stations has a value. To quantify this value, staff analyzed how the market would value the use of this apparatus. As such, staff analyzed the value of leasing apparatus over their expected lives. Volunteer companies provide apparatus to support minimum staffing, and staff has determined that the following apparatus would be utilized by career staff to provide minimum staffing service: 14 engines, five ladder trucks, 16 medic units, one heavy rescue

<sup>15</sup> Source: Assessment and Land Parcel Database.

<sup>16</sup> Annual value, utilizing capitalization rates, was determined by multiplying each facility's estimated appraised value by the capitalization rate of 7.75 percent. Sum may not equal due to rounding.

vehicle, and one tanker. This amount includes reserve units necessary to respond to events of extraordinary need.

The methodology behind determining the annual value of use of these apparatus is a simple lease modeling that considers loan amount, an interest rate (assumed at 6 percent), salvage value, and the expected life. The Department of General Services has advised an appropriate salvage value for fire apparatus is 8 to 10 percent; staff has used 10 percent in this analysis.

**Table 5. Apparatus<sup>17</sup>**

Vehicle	Quantity	Loan Amount	Expected Life	Salvage Value	Annual Value
Engine	14	\$900,000	10	\$90,000	\$1,770,893
Ladder Truck	5	\$1,500,000	12	\$150,000	\$921,092
Medic Unit	16	\$400,000	4	\$40,000	\$1,945,615
Heavy Rescue	1	\$1,100,000	15	\$110,000	\$115,928
Tanker	1	\$600,000	15	\$60,000	\$63,233
<b>Total</b>	<b>37</b>				<b>\$4,816,761</b>

It should be noted that just as volunteer companies provide staffing beyond the required minimum, they also own additional apparatus than the 37 noted in Table 5. Those apparatus that support staffing beyond the required minimum are known to exist but are not included in staff's value analysis just as overstaffing are not included in staff's value analysis of minimum staffing personnel.

Maintenance and fuel are also considerations in the concept of value, and those have been calculated to be approximately \$960,000 per year, provided by the Department of General Services.

In addition to apparatus, volunteer companies own additional firefighting and EMS equipment used to respond to fire and emergency medical calls for service. Staff acknowledges the companies own this equipment but determined that quantifying the equipment would be difficult. Also, staff notes in a later section of this report that the County has centralized the purchase and replacement of critical safety equipment such as self-contained breathing apparatus (SCBA) and EMS defibrillators, which means volunteer companies are no longer be responsible for funding those purchases.

### **3. Ancillary Activities of Volunteer Companies**

Beyond minimum staffing coverage, volunteer companies provide additional non-operational, or *ancillary*, services to LC-CFRS and to the community at-large. Staff attempted to assign a monetary value to those volunteer services, though staff and volunteers do agree that fully

<sup>17</sup> Source: AOC algorithm funding guidance.

valuing all services is difficult. Staff and volunteers recognize that there is an inherent and unquantifiable benefit of diverse, highly trained, highly motivated volunteers providing emergency medical and fire suppression services to the communities in which they live.

During the course of staff's analysis, volunteer companies submitted data quantifying the number of hours during which the company engaged in ancillary activities in an average year. Follow up meetings were held to validate the data received and more fully understand how each volunteer company operates. The general categories of ancillary activities include: public service, fundraising, EMS standby, and station fills. Public service activities encompassed a broad range of activities including: volunteer company participation in parades, public education-related activities, Santa Rides, station tours, open houses, and birthday parties. Fundraising activities were categorized as such when volunteer companies explicitly labelled them as such. EMS standby included instances where volunteer companies provide EMS standby at sporting and other community events. Finally, station fills were instances where volunteer personnel staffed stations other than their own so that career or volunteer personnel were engaged in emergency service could attend training or other events. In total, volunteer companies estimated an annual amount of 49,145 hours of ancillary activities in a typical year.

To value these hours, staff averaged the actual salaries and benefits of all LCFR career ranks for FY 2019 to develop an hourly rate of \$56.18 (see Table 6). This rate was purposefully not weighted to reflect the actual composition of each type of position; rather, each position type was weighted equally because in most instances rank is not directly related to the performance of these ancillary services. For example, the value of a technician volunteering at an open house is similar to the value of a chief officer. Staff then multiplied the total number of hours of ancillary activities by the average hourly rate of \$56.18. The \$56.18 hourly rate was only used for purposes of valuing *ancillary services*; this rate was not used in the analysis of the value in the *Personnel Required for Minimum Staffing* section above.

**Table 6. Hourly Rate for Ancillary Activities**

<b>Position Type</b>	<b>Average Salary<sup>18</sup></b>	<b>Fringe Benefits</b>	<b>Total<sup>19</sup></b>	<b>Hourly Rate</b>
Firefighter	\$49,651	\$29,093	\$78,745	\$36.06
Firefighter, Medic Stipend	\$69,260	\$32,892	\$102,152	\$46.77
Technician	\$62,611	\$31,604	\$94,215	\$43.14
Technician, Medic Stipend	\$76,946	\$34,381	\$111,327	\$50.97
Lieutenant	\$72,362	\$33,493	\$105,855	\$48.47
Lieutenant, Medic Stipend	\$85,084	\$35,958	\$121,042	\$55.42
Captain	\$97,343	\$38,332	\$135,675	\$62.12
Captain, Medic Stipend	\$112,997	\$41,365	\$154,362	\$70.68
Battalion Chief	\$112,021	\$41,176	\$153,197	\$70.15
Battalion Chief, Medic Stipend	\$126,379	\$43,957	\$170,337	\$77.99
<b>Average Hourly Rate</b>				<b>\$56.18</b>

As indicated in Table 7, the estimated total value of ancillary activities in an average year for all 15 volunteer companies is \$2.76 million.

**Table 7. Summary of Volunteer Company Annual Ancillary Activities<sup>20</sup>**

<b>Activity Category</b>	<b>Total Number of Hours</b>	<b>Value Per Hour</b>	<b>Total</b>
EMS Standby	8,190	\$56.18	\$460,114
Public Service	22,090	\$56.18	\$1,241,016
Station Fills	2,990	\$56.18	\$167,978
Fundraising	715	\$56.18	\$40,169
Administration	15,160	\$56.18	\$851,689
<b>Total</b>	<b>49,145</b>		<b>\$2,760,966</b>

In addition to the data summarized above, staff reviewed LOSAP data self-reported by volunteers. This data included activity counts for: meeting attendance (1 point per meeting); holding a position as a committee chair, delegate to county wide committee (20 points); and meeting attendance as a volunteer official delegate, officer, or chair (1 point per meeting). While not included in the calculation above, it should be noted that a total of 12,000 points were reported in these categories in FY 2017 (the most recent full year of data). Multiple volunteer fire companies shared with staff that LOSAP data are self-reported and often under-reported, so this data source could not be consistently quantified.

<sup>18</sup> Source: Actual FY 2019 salary data

<sup>19</sup> Sum may not equal due to rounding.

<sup>20</sup> Source: Data detailing hours of ancillary activities were provided by individual volunteer companies to County staff; staff determined the category for each hour of ancillary activities.

#### **4. County-Provided Direct and Pass Through Resources**

The County has, over the years, provided some level of funding for volunteer companies so that it has remained possible for companies to continue to provide value to the system. This funding includes benefits to individual volunteers and to companies. The major resources the County provides to volunteer companies in support of their services includes the annual payment to volunteer companies totaling \$6.379 million, funding to support the purchase of replacement apparatus, funding to support volunteer benefits, and special revenue.

***Payment to Volunteer Companies.*** The County currently provides \$6.379 million to volunteer companies on an annual basis to cover the cost of general operations. The \$6.379 million contribution is distributed between 15 volunteer companies based on a methodology agreed to and managed by LC-CFRS' AOC; the methodology is typically referred to as "the algorithm." The algorithm was developed by volunteer leaders at the direction of the Board of Supervisors and was subsequently endorsed by the Board in 2013. Each year, the AOC, through its budget subcommittee, secures individual company income and expense data for the current fiscal year. These amounts are used in the funding distribution algorithm, which uses a three-year rolling average. Payments determined by the algorithm are made to volunteer companies on a quarterly basis. While staff did not request access to annual budgets for each volunteer company, staff can infer that companies support a large portion of their operations through the County's \$6.379 million.

***Funds for Apparatus Purchases.*** Within the CIP, a total of \$3 million is included for the purchase of apparatus. The allocation is available System-wide, and over the last six fiscal years, approximately \$1.6 million on average of the total \$3 million has been allocated to volunteer companies. By policy, volunteer companies can contribute a minimum of 41 percent of the cost of the apparatus and the County, pending availability of funds, will provide a 59 percent match and the apparatus is still considered to be volunteer-owned. The algorithm does provide an annual contribution to each company that can be assigned to the cost of replacing apparatus. It is intended to be used for that purpose, however, not required to be used for that purpose.

***Individual Volunteer Financial Benefits.*** The County budgets annually for additional financial benefits for volunteers. These benefits are enjoyed by current volunteers and, based on anecdotal feedback, are used to recruit and retain new volunteers to the System. These benefits are summarized below.<sup>21</sup>

- **Tuition Reimbursement Program:** The County budgets \$50,000 annually (FY 2019) for this program, which provides \$1,000 per fiscal year to eligible volunteers for up to four years for recognized tuition expenses.

---

<sup>21</sup> More detail on benefits provided to volunteer fire and rescue members is available in the June 13, 2017 FGOEDC [item](#) on that topic.

- Length of Service Award Program (LOSAP) is a defined benefit program for volunteers who meet length of service criteria. The accrual rate is \$12.00 per year of Service Credit with a maximum of 25 years, not to exceed \$300 a month. As of July 2018, the total number of participants was 2,149 with 694 earning service credits. The County-paid FY 2019 premium for LOSAP was \$1.225 million.

While not pertinent to this value-based analysis, it should be noted that the plan is currently 78 percent funded such that if the plan were frozen (allowing for no new entrants and current participants could not earn additional service credits), the estimated one-time cost to make the program fully funded would be \$5.3 million. Alternatively, the plan could be amortized over a number of years (five to 20). The annual amount for amortization over five years is projected to be \$1.31 million. This payoff information is included because it was a topic of discussion with multiple volunteer fire companies throughout the data-gathering portion of this analysis but has no bearing on this analysis.

- Accidental Death and Disability: This supplemental policy includes a weekly income benefit, coverage for medical expenses in excess of Workers' Compensation, and a death benefit for volunteers. The County-paid FY 2019 premium for this benefit was \$37,500.
- Tangible Personal Property Tax: One motor vehicle owned by members of volunteer emergency medical services agency or a volunteer fire department is permitted to be assessed a personal property tax rate of \$0.01 per \$100 of assessed value rather than the general vehicle property tax rate of \$4.20. Based on data provided by the Office of the Commissioner of the Revenue, staff estimates the foregone revenue is approximately \$296,500 annually based on the past three years of data.

***Entitlement and Other Special Revenues.*** In support of the Combined System in the provision of fire and rescue services, the County has elected to distribute some portion of its Four-for-Life and Aid to Localities (ATL) special revenue to volunteer companies. Volunteers also receive a portion of the revenue generated by the EMS Transport Reimbursement Program. While the year-over-year total of these revenue sources is not consistent and not a fixed revenue source, because of the high dollar amount, staff does believe the revenue is an important consideration when analyzing the overall value volunteer companies bring to the System. However, because this revenue is non-local tax funding, staff has treated it differently in the final value summary (see Table 9).

- Entitlement Revenue: The two most significant sources of entitlement revenue received system-wide are Four-for-Life and Aid to Localities (ATL). The County has a long-standing record of sharing both sources of revenue with volunteer companies. Four-for-Life is administered by the State of Virginia and provides funding for the training of emergency medical service personnel and for the purchase of necessary equipment and supplies. LCFR distributed approximately \$54,000 in Four-for-Life to volunteer companies in FY 2018. ATL provides Virginia localities with funds to pay for training, construction of training centers, fire-fighting equipment and protective clothing.

Allocations are population-based. LCFR distributed approximately \$782,000 in ATL funds to volunteer companies in FY 2018. This represents combined entitlement revenue of \$836,000.

- EMS Transport Program Revenue: Net revenue from the EMS Transport Program is distributed according to a formula specified in Chapter 1097 of the Codified Ordinances, providing funds to both LCFR and volunteer companies based on ownership of apparatus, station providing transport, EMS provider affiliation, and first responder affiliation. The total amount collected through this program in FY 2018 was \$5.888 million, and \$2.378 million was distributed to volunteer companies.<sup>22</sup> It should be noted that volunteer providers contribute to the generation of this revenue as responders in the Combined System.

Table 9 below summarizes the value staff has calculated. On an annual basis, staff has calculated that for approximately \$9.6 million of County resources, volunteer companies provide \$27.7 million of benefits, or \$18.1 million of value to the Combined System. Should EMS Transport Reimbursement Program revenue and other grant revenue be considered, the value is approximately \$14.9 million.

---

<sup>22</sup> [September 11, 2018 FGOEDC, Item 3: EMS Transportation Reimbursement \(Cost Recovery\) Update](#)



**Table 9. Value of Volunteer Providers**

<b>VALUE</b>	
<b>Personnel</b>	
Minimum Staffing Positions	\$14,947,388
<b>Subtotal - Personnel</b>	<b>\$14,947,388</b>
<b>Operations</b>	
Station Usage	\$4,188,028
Apparatus Usage	4,816,761
Fuel	164,790
Vehicle Maintenance	795,200
<b>Subtotal - Operations</b>	<b>\$9,964,779</b>
<b>Ancillary Activities of Volunteers</b>	<b>\$2,760,996</b>
<b>Total – Gross Value</b>	<b>\$27,673,163</b>
<b>COUNTY PROVIDED RESOURCES</b>	
Payment to Volunteer Companies	\$6,379,000
Funds for Apparatus Purchases	1,600,000
Individual Volunteer Benefits	1,609,000
<b>Total – County Provided Resources</b>	<b>\$9,588,000</b>
<b>Net Value</b>	<b>\$18,085,163</b>
<b>Entitlement and Other Special Revenues</b>	<b>\$3,214,000</b>
<b>Net Value Less Entitlement and Other Special Revenues</b>	<b>\$14,871,163</b>

*Components of Qualitative Analysis*

Beyond the quantitative analysis, staff and the volunteer companies acknowledge that there are some critical components of their services that cannot be quantified but are important to understand and are therefore included in this item.

**1. Value of Fire and EMS Professionals in the Community**

Staff and volunteers who live and work or volunteer in their communities are regarded as highly trained, skilled professionals when they are both on and off duty. During the course of interviews with volunteer companies, staff recorded many perspectives regarding the value of System volunteers to their communities. Volunteers trained as EMS providers are often utilized as

neighborhood resources when injuries occur. The same sentiment is echoed on the career side. Additionally, both career and volunteer fire and EMS providers are known as community leaders and role models for Loudoun County youth. According to the most recently available self-reported LOSAP data (FY 2017), active system volunteer members (operational only) donated 433,254 hours in in FY 2017 in assigned duty, averaging to 693 hours per volunteer annually or 13 hours per week, roughly equivalent to one, 12-hour shift.<sup>23</sup> This level of time commitment demonstrates the dedication to the volunteer role expressed by volunteer leadership.

Finally, System volunteers are diverse in age, experience, and professional skillsets. Each volunteer brings unique value to the System and community at large. For example, occupations noted during the course of interviews with volunteer leadership included: engineering, accounting, IT, and other highly skilled professions. In some situations, volunteers leverage these professional skillsets to provide added value to the System.

## **2. Canteen Service, Volunteer Chaplain Dispatches, Surge Capacity, and Backfilling**

In addition to the quantifiable amount are the many examples of ancillary benefits provided to the County through the volunteer companies and members. Volunteers noted support services provided by volunteer companies (canteens) through rehab support units in cases of prolonged response to emergency incidents. Volunteer rehab support units have provided tents, cots, fans, meals and other supplies during prolonged emergency incidents. Over the past two years, volunteer support units have provided canteen service on 64 occasions.<sup>24</sup> In addition, volunteer chaplains are dispatched to provide support to citizens during incident response. Volunteer chaplains responded to incidents a total of 420 times over the past two years.

Many alluded to the additional capacity provided by volunteers, who live close to their stations and can quickly provide support during severe weather events or emergency response events that require career and volunteer shifts to be dedicated to mutual aid. In absence of volunteers, career staff would be held over on overtime. In some other cases, during severe and prolonged responses, there would not be enough career staff to replicate the support provided by volunteers. In less emergent circumstances, volunteer companies also provide backfilling support during scheduled training for career staff, who otherwise would need to complete required trainings on overtime.

**ISSUES:** During discussions with volunteer companies, one stakeholder raised the possibility that staff's analysis should consider the benefit the County has experienced in the past by not having to supply minimum staffing positions exclusively through career staff. It was suggested that this type of analysis would show a significant amount of cost avoidance over the decades

---

<sup>23</sup> "Active" means the individual contributed and reported sufficient time through service to qualify for a LOSAP plan year of retirement eligibility. The number of Active Volunteers (Administrative and Operational) in FY 2017 was 781. The breakdown between operational and administrative is approximately 80/20, thus operational members were approximately 693.

<sup>24</sup> CAD data provided by LCFR including: 23 responses from Sterling Rescue, 23 from Loudoun Rescue, and 18 from Arcola between September 12, 2016, and September 12, 2018.

when volunteers provided services, which theoretically allowed the County to spend tax dollars for other purposes. This type of extensive analysis was determined to be outside of the scope of the initial request from the Board; further, that type of analysis requires expertise beyond that of staff. Staff does acknowledge, however, that the career side of the System has been able to grow more slowly over the last four decades than would have occurred should volunteer companies not existed 40 years ago.

Loudoun County has a long-standing precedent of providing the community with fire suppression and emergency medical services through the LC-CFRS. This combined system is a unique partnership accomplished through continued and careful collaboration, which occurs through standing, formal committees as well as more informal relationships throughout the County. For example, in the past six budget years, a total of 38 operational personnel totaling \$3.71 million in local tax funding have been added to supply career fire and EMS personnel previously provided by volunteers. Additionally, in FY 2019, the Deputy Chief of Volunteer Administration position was added to work regularly with volunteer members in station locations as well as engage in meetings to support volunteer interests. The Deputy Chief of Volunteer Administration will coordinate the needs of the volunteer companies with the various divisions and sections within LCFR and serve in an advisory capacity to the System Chief. This position is currently being recruited.

During the course of analysis, staff conducted a high level review of peer jurisdictions and found a wide array of fire and EMS arrangements from primarily volunteer to fully career systems. Some jurisdictions utilize volunteers for supplemental staffing while others demonstrate full partnerships similar to LC-CFRS.

Finally, in recent years the County has taken more responsibility for standardizing equipment purchases across the System, including purchasing Self Contained Breathing Apparatus (SCBA), SCBA masks, mobile and portable radios, cardiac monitors/defibrillators, vehicle-mounted computers, portable computing devices for EMS reporting, ballistic body armor for high risk incidents, and helmet shields for all uniformed career and volunteer personnel.

As the Combined System embarks upon the update of its 2005 Service Plan, one of the issues that will need to be discussed internally and with the Board of Supervisors is the viability of alternatives to the System's current shift schedule. As discussed in this paper, the System supports three different shift types on a 42-hour work week. This particular shift schedule and work week are unique in the region and are inherently inefficient, but the schedules do support the volunteer component of the System, as volunteers are more generally available to fully staff shifts in the evenings and on weekends. While a discussion of the costs and benefits of different schedules and work weeks was considered to be out of the scope of this analysis, staff believes this issue area is a topic for discussion. Comparator jurisdictions are moving to a single-shift model, which, if unaddressed in Loudoun County, will make it more difficult to recruit and retain qualified career personnel.

**FISCAL IMPACT:** This is an information item and therefore has no fiscal impact.

## **ATTACHMENTS**

1. Administrative Operations Committee (AOC) Comments
2. Current Minimum Staffing Positions
3. Calculation of Value of Volunteer-Provided Minimum Staffing (to support Table 2)
4. AOC's Valuing of Total Assets

## **Value of Volunteers – AOC Response Commentary to the Draft Budget Office Analysis**

This commentary was written after the review of the draft *Value of Volunteers* analysis was initially presented to the Administrative Operations Committee (AOC) on October 11, 2018. Comments on the draft were solicited from all AOC members the evening of the presentation and thereafter. All comments received were incorporated in the following commentary.

The AOC would like to express its thanks to the staff of the Office of Management and Budget for their dedication to this collaborative effort. None of the comments contained herein are to be construed as criticism of the effort they dedicated to the analysis. The comments are a reflection of the AOC's interest in ensuring the report is clear, concise and as accurate a measure of the value of volunteer commitment to the combined system as is possible.

**The commentary follows the outline of the report as drafted. Not all sections require comment. The issues highlighted here are of particular importance to the AOC and warrant comment.**

**Background: There is significant background associated with the genesis of this project dating back to 2013 and prior to the request for an analysis by the FGOEDC. The background is illustrative of the volunteer cadre's interest in collaborating on an effort to secure a better sense of the positive economic impact on Loudoun County taxpayers of their continued service in the combined fire and rescue system. The chronology below enhances the more recent background information portrayed in the formal report.**

- The Presidents' Group (precursor to the AOC) in collaboration with the then DFREM developed a replacement cost analysis in 2013 based exclusively on minimum staffing employing differential rates consistent with staffing positions (no facilities or other volunteer value points were considered). The report was delivered to the FGOEDC in September 2013. (see *Volunteer Fire and Rescue: Service at the Crossroads*, September 2013. Presidents' Group, Fire and Rescue Commission. Estimated cost of minimum staffing replacement: \$22,484,579)
- The same project reported the value of volunteer hours across all volunteer activities of \$30,615,283; with duty hours alone estimated to be \$23,791,000
- Administrative Operations Committee (AOC) initiated a new "Cost/Benefit" project in 2016 as an update to the 2013 report
- Collaboration with LCFR and OMB began immediately at a meeting on August 29, 2016 *before* the request for an analysis was made by the FGOEDC for a similar analysis on June 13, 2017
- The first formal meeting with OMB, now the cognizant administrative entity for the reframed project, occurred on August 8, 2017
- Significant data collection from companies regarding 'ancillary activities' began in 2017, concluding in May 2018

- Confirmation on a 'replacement cost' methodology occurred in a meeting with OMB on July 23, 2018 and was reviewed in individual meetings with each company from August 17 through September 5, 2018
- The project plan called for a review of the draft report at the October 11, 2018 meeting of the AOC.
- The draft presented represented changed methodology from a 'replacement cost' model to a 'economic value' model one week prior to the report to AOC
- The draft report was presented to AOC on October 11, 2018 with feedback on issues presented to OMB staff during the meeting
- A special meeting of an AOC ad hoc subcommittee to gather additional data to support suggested changes occurred on October 18, 2018

## Components of the Quantitative Value Analysis

### 1. Personnel Required for Minimum Staffing

The AOC pointed out that the concept of *minimum staffing* was appropriate to a *replacement cost analysis* but **not** for an economic value analysis (non-budgetary analysis). It has proposed that hours actually committed by volunteers to run emergency service calls employing staff beyond the minimum staffing needs to be calculated and added to this cost factor.

- Two processes were reviewed by the AOC ad hoc subcommittee and found to be generally consistent:
  - 1) Data collection from each company on additional staffing over minimums, and 2) a review of data on volunteer staffing hours reported in LOSAP
- Analysis indicates a total commitment of volunteer service hours in emergency call response totals \$24,340,209 versus the reported \$14,856,144 in the minimum staffing section of the report. The former number was derived employing duty hours officially logged in the LOSAP program and the county suggested average per-hour figure employed in the original methodology of \$58.16 per hour. The AOC recognizes the value of a more stratified hourly rate based on position; however the lack of time after the change in methodology precluded a more extensive effort at developing that more complex metric.

The AOC proposes the former figure be employed to more accurately portray the *current state value* of volunteer service hours. Alternatively, and for the purposes of this discussion, the total hour commitment secured from LOSAP could be multiplied against the ranges of stratified salaries in the current analysis. This would offer a picture of the range of the impact until such time as a more formal analysis could be conducted.

- The AOC points out that any suggestion for meeting minimum staffing (replacement of volunteers at county established levels) *requires additional headcount beyond the number*

*reflected* in actual shifts. Example: the four new career staff about to begin a shift at Purcellville required a budgetary commitment of 10 FTEs.

- Also noted is the likelihood that additional county FTEs, including officers assigned to administrative duty, would also place a burden on administrative costs at LCFR which are not well documented in the report.

## 2. Operations

### Value of use of Volunteer Stations

- AOC suggest that *utility costs* be factored into the cost per square foot employed in the 'lease' methodology for facilities owned by volunteer corporations. The AOC budget subcommittee provided seven years of individual company utility costs reported during the annual county funding distribution process at OMB's request. Three dollars per square foot for *maintenance* is mentioned in the report but utility costs were not. Companies reported \$320,392 in utility expenses in FY 18 for company owned stations.
- AOC members familiar with market conditions in Loudoun County feel the two figures employed for valuing square footage are *undervaluing* the cost of such facilities.
- AOC desires to qualify the impact of the county funding algorithm on operational expenses. While the algorithm 'fully funds' reported expenses for the first time this year, one of the primary purposes of the its development was to first analyze the "funding gap" between needed *and allowable* operating expenses, normalized for such an analysis. In the first year of the new distribution there was a declared funding gap across all companies of \$478,084. For the succeeding five years a gap has existed between the needed funds and the actual level of funding available to all companies. The gap has declined as companies have maintained fiscal discipline controlling costs and through an increase in available finding from \$6,019,000 in 2013 to \$6,315,000 in 2018. Further, County funding does not cover all company expenses even in a 'fully funded' year. Not all expenses are *allowable expenses* for inclusion in the algorithm. (Example: Purcellville Fire's county contribution represents about 45% of its operating budget.)

### Apparatus

Much like minimum staffing, apparatus use for emergency service beyond minimums needs to be factored into the 'economic value' methodology.

- AOC is conducted research on 'reserve' apparatus relied upon by the County, exclusive of apparatus owned by companies for which the County actually provides reserve equipment. These data have been submitted in tabular form to the OMB and should be added to the final review and impact the economic value of this section of the analysis.

- Apparatus maintenance and fuel costs, like utilities for company owned facilities, were excluded from the analysis. In FY 2018 the total cost of apparatus maintenance for all companies was \$1,071,768. Fuel costs in the same period were \$318,039.

### 3. Ancillary Activities

**AOC finds this analysis fairly well represents, under current data (in-) sufficiency, the current state with these caveats.**

- There is no well-established national metric for valuing volunteer service for fire fighting and EMS activity
- Former Chief of the Department Keith Brower warned the FGOEDC of the difficulty of making assumptions of any model and suggested ‘assumptions’ would be just that, assumptions
- LOSAP data in aggregate volunteer commitment to hours, with the possible exception of *emergency calls* (and perhaps required training) historically under-reports actual volunteer commitment for several reasons, among them:
  - The system ‘maxes out’ the allowable and required hours-based points and offers no real incentive to report hours beyond minimums
  - Active members already receiving the retirement benefit (very senior volunteers) feel little need to report hours
  - Very young volunteers see a retirement annuity at age 55 as a benefit beyond their reach and do not consistently report their hours
  - Current tangible benefits offered volunteers *contingent upon points qualification* are few, with only a portion of active volunteers actually enjoying such benefits

Other factors that are not easy to assign a valuation metric that are part of the culture of the volunteer experience in Loudoun, and not specifically tallied in this section, are described on page 14 of the analysis under the two topics listed on that page.

### 4. County Provided Resources

Of the most discussed sections of the report beyond staffing, this section provided the most consistent and thought provoking comments from members of the AOC. The discussions centered on the efficacy of portraying these programs and their financial cost to the county as actually volunteer centric or whether they would be expenses incurred by the county if there were no volunteers. *Hence ‘counting’ these disbursements against the value that volunteers contribute would be misleading.*

In 2013, as the funding distribution algorithm was being developed, advice provided the Presidents’ Group from the Board of Supervisors through the Fire and Rescue Commission, was to focus energy as volunteers on running calls and training, not fundraising. As such it was logical that some increased



measure of dependence on county resources would occur, but not because of volunteer status but because volunteer companies were “instrumentalities” of county government.

In a related vein we would like to direct attention to the **Issues** section of the report where there are observations made by volunteers regarding as yet unmeasured areas for additional evaluations that are related to this discussion of the balance between volunteer contributions and county contributions (see the reference to *cost avoidance* in the **Issues** section).

**Payment to Volunteer Companies:** The duty to provide emergency fire and rescue protection does not end if all volunteers were to be eliminated. The funds in this category would still need to be included in any Fire and Rescue budget to sustain operations regardless if the fire and rescue service is provided by civil service firefighters and medics or volunteer counterparts. Thus it is our position that the description is misleading and portrayed as a benefit *exclusive* to the volunteers.

**Funds for Apparatus Purchases:** Ambulances, engines, heavy rescue squads still need to be acquired for system use regardless of who is operating them or the proportion of funds provided through the CIP. The concerns regarding a misleading description stated above in payments to volunteer companies are equally relevant for this category.

**Individual Volunteer Benefits; Tuition Reimbursement Program:** This is a benefit enjoyed by a relatively small percentage of volunteers and is a comparatively de minimis amount. We are of the position that not reporting this amount as far less than what is funded for our career counterparts again creates a misleading impression that this is a volunteer only unique benefit given by the county tax payers.

**Individual Volunteer Benefits; Length of Service Award Program (LOSAP):** It is our understanding that LOSAP benefits and issues associated with actual participation are captured elsewhere in the reported calculations and in our commentary (see LOSAP under Ancillary Activities). It is worth noting that the premium payments would end should volunteers cease to exist. The matter at hand would then be the differential between providing comparable benefits to career replacements.

We also recommend the deletion of this section of the report noted as “not pertinent to this value” and that “has no bearing on this analysis.”

**Individual Volunteer Benefits; Accidental Death and Disability:** Similar to the above analysis clearly this AD&D protection would be afforded to operational members of the system if they were salaried employees so again it is portrayed as a unique burden of the taxpayers given as a benefit exclusively to volunteers.

**Entitlement and Other Special Revenues; Entitlement Revenue (Aid to Localities, Four-for-Life):** While grant awards may flow through county government they are not county funds. The grants are regulated and administered by the Commonwealth and do not constitute county taxpayer dollars. As with the above categories it is misleading to portray the grants as benefits to volunteers from the county budget.

**EMS Transport Program Revenue:** The volunteer companies are significant generators of portions of this revenue. Portraying this figure as a contribution from county funds to the volunteers without

clearly illustrating that large portions of this revenue stream are generated by the volunteers is highly misleading.

### **1. Value of Fire and EMS Professionals in the Community:**

While well stated in the current report, the AOC would like to emphasize the positive impact of volunteers who provide all manner and form of community service beyond their obligations for formal duty. There are several Boy and Girl Scout Explorers programs sponsored by companies; formal 'junior' firefighter programs or memberships which help encourage youth to enter volunteer service or consider a career in fire and rescue; members who provide fire safety education at schools, home-owners' associations and other community entities beyond the usual public education roles in their companies; others write articles for the local newspapers on a regular basis; some read stories to children in the public libraries; others mentor young people who may never see the inside of a fire station but are encouraged to do public service of one sort or another; and finally, volunteer companies are increasingly serving as the 'farm system' for career departments, losing volunteer members in whom companies have invested enormous time and energy developing and sometime rely on for operational survival to the career system.

The level of educational attainment, professional career leadership, business ownership, socioeconomic and ethnic diversity is all present in measureable quantities in the volunteer cadre. The value, not just to volunteer communities but to the combined system as whole, needs evaluation. The benefits of a 'workforce' possessing such skills and diversity is significantly undervalued in Loudoun County at the moment and would be coveted by any Fortune 500 entity.

We suggest conducting a study of these contributions by volunteers and that of the career staff in Loudoun County exclusively and a similar study of the socio-economic and diversity issues noted above.

### **2. Canteen Service, Surge Capacity, and Back Filling:**

We would like to have had the ability to actually calculate the real cost impact of surge capacity. Lack of time and data insufficiency precluded that from occurring. In addition there needs to be consideration made of the contribution to the system of backfilling capability when career crews are called back on specific times and on specific dates for call back training, wherein volunteers mount a crew for duty outside the parameters of regular duty shifts, akin to surge capacity for weather or other emergencies but different than station fills noted in the ancillary activity section of the report. What would be the cost of filling those positions in those specific instances with additional career staff?

**Issues**

The AOC believes that this section is a good summary of some of the challenges facing the overall analysis attempted here and offers evidence that much more needs to be studied to form a full and accurate picture of the true value of volunteers in a combine fire and rescue system. As noted earlier a true cost avoidance analysis or benefit analysis of the impact over more than a single or relatively few years of extended (past and future) volunteer service would be very helpful in assessing the value of having a robust combination system where there was a significant number of active volunteers working side by side with career staff.

**Respectfully Submitted**

**The Elected Members of the Administrative Operations Committee**

**November 6, 2018**

LC-CFRS Minimum Staffing Breakdown by Battalion  
Career and Volunteer

Career Staffing Monday - Friday (6am-6pm)		Career Staffing Saturday-Sunday (6am-6pm)		Career Staffing All Nights (6pm-6am)		Volunteer Night Staffing (all nights) (6pm-6am)		Volunteer Weekend Staffing (6am-6pm)		Volunteer Weekday Staffing (6a-6P)	
Unit/Station	Personnel	Unit/Station	Personnel	Unit/Station	Personnel	Unit/Station		Unit/Station	Personnel	Unit/Station	Personnel
Battalion 601	Staffing	Battalion 601	Staffing	Battalion 601	Staffing	Battalion 601	Staffing	Battalion 601	Staffing	Battalion 601	Staffing
Shift Commander	1	Shift Commander	1	Shift Commander	1	Shift Commander	0	Shift Commander	0	Shift Commander	0
Battalion Chief 601	1	Battalion Chief 601	1	Battalion Chief 601	0	Battalion Chief 601	1	Battalion Chief 601	0	Battalion Chief 601	0
Safety Officer 601	1	Safety Officer 601	1	Safety Officer 601	1	Safety Officer 601	0	Safety Officer 601	0	Safety Officer 601	0
EMS Supervisor 601	1	EMS Supervisor 601	1	EMS Supervisor 601	1	EMS Supervisor 601	0	EMS Supervisor 601	0	EMS Supervisor 601	0
FS06: Ashburn	9	FS06: Ashburn	9	FS06: Ashburn Medic	2	FS06: Ashburn	6	FS06: Ashburn	0	FS06: Ashburn	0
FS11: Sterling Fire	7	FS11: Sterling Fire	0	FS11: Sterling Fire	0	FS11: Sterling Fire	6	FS11: Sterling Fire	6	FS11: Sterling Fire	0
RS15: Sterling Rescue	0	RS15: Sterling Rescue	0	RS15: Sterling Rescue	0	RS15: Sterling Rescue	2	RS15: Sterling Rescue	2	RS15: Sterling Rescue	2
FS18: Sterling Fire (Cascades)	3	FS18: Sterling Fire (Cascades)	0	FS18: Sterling Fire (Cascades)	0	FS18: Sterling Fire (Cascades)	3	FS18: Sterling Fire (Cascades)	3	FS18: Sterling Fire (Cascades)	0
RS25: Sterling Rescue (Cascades)	0	RS25: Sterling Rescue (Cascades)	0	RS25: Sterling Rescue (Cascades)	0	RS25: Sterling Rescue (Cascades)	2	RS25: Sterling Rescue (Cascades)	2	RS25: Sterling Rescue (Cascades)	2
FS22: Lansdowne	5	FS22: Lansdowne	5	FS22: Lansdowne	0	FS22: Lansdowne	5	FS22: Lansdowne	0	FS22: Lansdowne	0
FS23: Moorefield	7	FS23: Moorefield	7	FS23: Moorefield	7	FS23: Moorefield	0	FS23: Moorefield	0	FS23: Moorefield	0
FS24: Sterling Fire (Kincora)	3	FS24: Sterling Fire (Kincora)	3	FS24: Sterling Fire (Kincora)	2	FS24: Sterling Fire (Kincora)	1	FS24: Sterling Fire (Kincora)	0	FS24: Sterling Fire (Kincora)	0
RS35: Sterling Rescue (Kincora)	4	RS35: Sterling Rescue (Kincora)	4	RS35: Sterling Rescue (Kincora)	0	RS35: Sterling Rescue (Kincora)	2	RS35: Sterling Rescue (Kincora)	2	RS35: Sterling Rescue (Kincora)	0
Sub-total (Battalion 601):	42	Sub-total (Battalion 601):	32	Sub-total (Battalion 601):	14	Sub-total (Battalion 601):	28	Sub-total (Battalion 601):	15	Sub-total (Battalion 601):	4
Battalion 602	Staffing	Battalion 602	Staffing	Battalion 602	Staffing	Battalion 602	Staffing	Battalion 602	Staffing	Battalion 602	Staffing
Battalion Chief 602	1	Battalion Chief 602	1	Battalion Chief 602	1	Battalion Chief 602	0	Battalion Chief 602	0	Battalion Chief 602	0
EMS Supervisor 602	1	EMS Supervisor 602	1	EMS Supervisor 602	1	EMS Supervisor 602	0	EMS Supervisor 602	0	EMS Supervisor 602	0
FS02: Purcellville Fire	8	FS02: Purcellville Fire	8	FS02: Purcellville Fire	0	FS02: Purcellville Fire	7	FS02: Purcellville Fire	0	FS02: Purcellville Fire	0
FS04: Round Hill	5	FS04: Round Hill	5	FS04: Round Hill	5	FS04: Round Hill	0	FS04: Round Hill	0	FS04: Round Hill	0
FS05: Hamilton Fire	4	FS05: Hamilton Fire	4	FS05: Hamilton Fire	4	FS05: Hamilton Fire	0	FS05: Hamilton Fire	0	FS05: Hamilton Fire	0
FS10: Lucketts	6	FS10: Lucketts	6	FS10: Lucketts	6	FS10: Lucketts	0	FS10: Lucketts	0	FS10: Lucketts	0
FS12: Lovettsville	5	FS12: Lovettsville	0	FS12: Lovettsville	0	FS12: Lovettsville	6	FS12: Lovettsville	6	FS12: Lovettsville	0
RS13: Loudoun Rescue	4	RS13: Loudoun Rescue	4	RS13 (Medic): Loudoun Rescue	2	RS13 (Medic): Loudoun Rescue	2	RS13 (Medic): Loudoun Rescue	0	RS13 (Medic): Loudoun Rescue	0
RS14: Purcellville Rescue	0	RS14: Purcellville Rescue	0	RS14: Purcellville Rescue	0	RS14: Purcellville Rescue	2	RS14: Purcellville Rescue	2	RS14: Purcellville Rescue	2
RS17: Hamilton Rescue	2	RS17: Hamilton Rescue	2	RS17: Hamilton Rescue	0	RS17: Hamilton Rescue	2	RS17: Hamilton Rescue	0	RS17: Hamilton Rescue	0
FS20: Leesburg	11	FS20: Leesburg	11	FS20: Leesburg	4	FS20: Leesburg	6	FS20: Leesburg	0	FS20: Leesburg	0
FS26: Loudoun Heights	5	FS26: Loudoun Heights	5	FS26: Loudoun Heights	5	FS26: Loudoun Heights	0	FS26: Loudoun Heights	0	FS26: Loudoun Heights	0
Sub-total (Battalion 602):	52	Sub-total (Battalion 602):	47	Sub-total (Battalion 602):	28	Sub-total (Battalion 602):	25	Sub-total (Battalion 602):	8	Sub-total (Battalion 602):	2
Battalion 603	Staffing	Battalion 603	Staffing	Battalion 603	Staffing	Battalion 603	Staffing	Battalion 603	Staffing	Battalion 603	Staffing
Battalion Chief 603	1	Battalion Chief 603	1	Battalion Chief 603	1	Battalion Chief 603	0	Battalion Chief 603	0	Battalion Chief 603	0
Staffing Officer	1	Staffing Officer	1	Staffing Officer	1	Staffing Officer	0	Staffing Officer	0	Staffing Officer	0
Relief Officer	3	Relief Officer	3	Relief Officer	3						
FS03: Middleburg	6	FS03: Middleburg	6	FS03: Middleburg	6	FS03: Middleburg	0	FS03: Middleburg	0	FS03: Middleburg	0
FS07: Aldie	5	FS07: Aldie	5	FS07: Aldie	5	FS07: Aldie	0	FS07: Aldie	0	FS07: Aldie	0
FS08: Philomont	4	FS08: Philomont	4	FS08: Philomont	4	FS08: Philomont	0	FS08: Philomont	0	FS08: Philomont	0
FS09: Arcola	5	FS09: Arcola	5	FS09: Arcola	5	FS09: Arcola	2	FS09: Arcola	0	FS09: Arcola	0
FS19: South Riding	9	FS19: South Riding	9	FS19: South Riding	9	FS19: South Riding	0	FS19: South Riding	0	FS19: South Riding	0
FS27: Kirkpatrick	7	FS27: Kirkpatrick	7	FS27: Kirkpatrick	7	FS27: Kirkpatrick	0	FS27: Kirkpatrick	0	FS27: Kirkpatrick	0
Sub-total (Battalion 603):	41	Sub-total (Battalion 603):	41	Sub-total (Battalion 603):	41	Sub-total (Battalion 603):	2	Sub-total (Battalion 603):	0	Sub-total (Battalion 603):	0
Monday-Friday (6am-6pm):	135	Saturday-Sunday (6am-6pm):	120	All Nights (6pm-6am):	83	All Nights (6pm-6am):	55	Saturday-Sunday (6am-6pm):	23	All Weekdays (6a-6p):	6
Revised: 09-19-2018											
			Career		Volunteer	Total					
			M-F (6A to 6P)		6	141					
			Weekend Days (6A to 6P)		23	143					
			All Nights (6P to 6A)		55	138					

Attachment 2

## Calculation of Value of Volunteer-Provided Minimum Staffing

Minimum staffing requirements (detailed in Table 1) for the Loudoun County-Combined Fire and Rescue System (LC-CFRS) ensure that the appropriate number and type (rank) of staff are available to execute incident response according to mandates, regulations, and LC-CFRS adopted standards.

**Table 1. LC-CFRS Minimum Staffing**

	Career	Volunteer	Total	Days Per Week
Weekdays for 12 hours	135	6	141	5
Weekend Days for 12 Hours	120	23	143	2
All Nights for 12 Hours	83	55	138	7
<b>Total</b>	<b>338</b>	<b>84</b>	<b>422</b>	

Staff used the table above to ascertain the value of volunteers providing minimum staffing coverage by determining how many career FTE would be needed to cover the 84 volunteer shifts.

As reflected in the table above, 12-hour volunteer shifts are either two, five, or seven days. All LCFR uniformed personnel are on a 42-hour per week schedule. Thus, to determine the number of career FTE required to fill the volunteer shifts (84), a ratio of shifts to FTE was determined for each type of shift by multiplying 12 hours by the days per week and dividing that total by the 42 hour work week.

**Table 2. Shifts to FTE Ratio Calculation**

	Volunteer	Days Per Week	Equation	Shifts to FTE Ratio
Weekdays for 12 hours	6	5	12 hours * 5 days / 42 hour work week	1.43
Weekend Days for 12 Hours	23	2	12 hours * 2 days / 42 hour work week	0.57
All Nights for 12 Hours	55	7	12 hours * 7 days / 42 hour work week	2.00
<b>Total</b>	<b>84</b>			

Further, the 84 shifts provided by volunteers on a weekly basis are comprised of the following types of career-equivalent positions, detailed in Table 3. To summarize, the 84 volunteer shifts are staffed by the following career-equivalent ranks: Firefighter (33), Firefighter – Medic (17), Technician (18), Captain (15), and Battalion Chief (1).

## Calculation of Value of Volunteer-Provided Minimum Staffing

**Table 3. Types and Quantity of Positions**

	Volunteer	Firefighter	Firefighter – Medic	Technician	Captain	Battalion Chief
Weekdays for 12 hours	6	3	3	0	0	0
Weekend Days for 12 Hours	23	9	5	5	4	0
All Nights for 12 Hours	55	21	9	13	11	1
<b>Total</b>	<b>84</b>	<b>33</b>	<b>17</b>	<b>18</b>	<b>15</b>	<b>1</b>

Using the Shifts to FTE Ratio multiplied by the number of career-equivalent positions for those shifts, staff determined the number of positions by which to value volunteer positions (rounding up to the next whole FTE) to reflect the actual number of personnel required to fill the minimum staffed shifts currently filled by volunteers. These values are reflected in Table 4 below and sum to a total of 135 positions necessary to fill the 84 volunteer shifts.

**Table 4. Minimum Staffing FTE by Rank and Schedule**

	Firefighter	Firefighter – Medic	Technician	Captain	Battalion Chief	Quantity of FTE
Weekdays for 12 hours	5	5	0	0	0	10
Weekend Days for 12 Hours	6	3	3	3	0	15
All Nights for 12 Hours	42	18	26	22	2	110
<b>Total</b>	<b>53</b>	<b>26</b>	<b>29</b>	<b>25</b>	<b>2</b>	<b>135</b>

Finally, the total quantity of each position type required to fill the minimum staffed volunteer shifts was multiplied by the FY 2019 average salary and benefit rates for each rank to develop the total value of approximately \$15 million. This value is shown in Table 5 (or Table 2 in the staff report).

**Table 5. Value of Volunteer-Provided Minimum Staffing**

	Quantity of FTE	Salaries	Benefits	Overtime	Total Value
Firefighter	53	\$2,631,503	\$1,541,929	\$662,500	\$4,835,932
Firefighter – Medic	26	\$1,800,750	\$855,191	\$325,000	\$2,980,941
Technician	29	\$1,815,731	\$916,518	\$362,500	\$3,094,749
Captain	25	\$2,433,567	\$958,306	\$312,500	\$3,704,373
Battalion Chief	2	\$224,042	\$82,351	\$25,000	\$331,393
<b>Total</b>	<b>135</b>	<b>\$8,905,592</b>	<b>\$4,354,296</b>	<b>\$1,687,500</b>	<b>\$14,947,388</b>

## AOC's Valuing of Total Assets

The Administrative Operations Committee (AOC) requested staff include the following table as an attachment to the staff report. The AOC believes this data describes the value of total assets owned by volunteer companies. The methodology for value is the same used for Table 5 in the staff report.

**Table 1. Apparatus**

<b>Vehicle</b>	<b>Quantity</b>	<b>Loan Amount</b>	<b>Expected Life</b>	<b>Salvage Value</b>	<b>Annual Value</b>
Engine	23	\$900,000	10	\$90,000	\$2,909,324
Ladder Truck	8	\$1,500,000	12	\$150,000	\$1,473,747
Medic Unit	31	\$400,000	4	\$40,000	\$3,769,630
Heavy Rescue	1	\$1,100,000	15	\$110,000	\$115,928
<b>Total</b>	<b>63</b>				<b>\$8,268,628</b>